What is claimed is:

1. A mechanical resonator comprising:
a beam formed of a semiconductor material;
an electrode formed of a semiconductor material closely spaced from the beam;
an insulator layer formed on a surface of one of the beam and the electrode; and
an electrical charge buried in the insulator layer.

2. The mechanical resonator of claim 1 wherein the semiconductor material of which the beam and electrode are formed further comprises a layer provided on a surface of a substrate wherein the layer is one of an epitaxial layer and an active layer.

3. The mechanical resonator of claim 2, further comprising a layer of sacrificial material between the substrate and the surface layer.

4. The mechanical resonator of claim 1 wherein the insulator layer further comprises an insulator layer formed on a surface of the electrode facing toward the beam.

5. The mechanical resonator of claim 1 wherein the insulator layer further comprises an insulator material selected from the group comprising silicon dioxide and silicon nitride.

6. The mechanical resonator of claim 1 further comprising a plurality of beams and a corresponding plurality of electrodes.

7. The mechanical resonator of claim 1 wherein:
the beam further comprises a plurality of laterally projecting fingers;
the electrode further comprises a plurality of laterally projecting fingers; and
the beam and electrode fingers intermesh.

8. An electrostatically drivable mechanical resonator comprising:
one or more elongate beams microstructurally formed in a semiconductor material;
an electrode microstructurally formed in a semiconductor material and laterally spaced apart from the beam in substantially parallel manner, the electrode including a surface facing toward a corresponding surface of the beam;

an insulator layer grown on at least one of the electrode surface and the beam surface; and

a substantially permanent electrical charge buried in the insulator layer.

9. The mechanical resonator of claim 8 wherein the insulator layer is grown on the electrode surface.

10. The mechanical resonator of claim 8 wherein the insulator layer further comprises one of a silicon dioxide and silicon nitride.

11. The mechanical resonator of claim 8 wherein the semiconductor material in which the beam and electrode are formed further comprises a single-crystal semiconductor material that is provided on one surface of a substantially planar substrate.

12. The mechanical resonator of claim 8 wherein the beam and electrode further comprise respective pluralities of laterally projecting and intermeshing fingers.

13. An electrostatically driven vibrating beam sensor comprising:

a proof mass suspended from a frame;

one or more electrostatically driven mechanical resonators coupled between the proof mass and the frame, each of the one or more mechanical resonators being formed of a semiconductor material as an elongate beam laterally spaced from a substantially parallel electrode wherein opposing lateral surfaces of the beam and electrode form a substantially parallel-plate capacitor;

an insulator layer formed on one of the beam and electrode lateral surfaces; and

an electrical charge buried in the insulator layer.

14. The sensor of claim 13 wherein the buried electrical charge generates an electrostatic field between the electrode and beam.

15. The sensor of claim 13 wherein the insulator layer further comprises an insulator material selected from the group of insulator materials comprising: silicon dioxide and silicon nitride.

16. The sensor of claim 13 wherein the one or more mechanical resonators are formed in a single-crystal semiconductor material that is coupled to one surface of a substantially planar substrate in which the proof mass and frame are formed.

17. The sensor of claim 13 wherein the insulator layer is grown on the electrode surface.

18. The sensor of claim 13 wherein the insulator layer is grown on the beam surface.

19. The sensor of claim 13 wherein each of the one or more mechanical resonators is formed having a frequency of vibration proportional to a force applied thereto.

20. The sensor of claim 13, further comprising an oscillator circuit electrically coupled for driving each of the one or more mechanical resonators.